



REQUEST FOR ACTION (RFA) RESPONSE

GLAST LAT Project Calorimeter Peer Review

17 – 18 March 2003

Action Item:	CAL – 017
Presentation Section:	Electronics
Submitted by:	B. Graf (F. Blanchette)

Request: Use of 28 AWG wires - Look into the use of 28 AWG wire for space flight; is there any heritage? Consider using a different gauge wire, preferably 24 AWG. Due to the large number of wires to be used in this subsystem, please give this careful consideration.

Reason / Comment: GSFC advises against the use of 28 AWG wire for spaceflight. Due to the very small diameter of this wire, experience has shown it to be highly susceptible to damage.

Response: 10 April 2003

28 AWG wire as per M22759/11-28 (7x36) Polytetrafluorethylene (PTFE) insulated copper, silver coated, 600 volt, 200°C was selected from the NASA Standard Part List (NSPL). This wire carries a current of no more than 10 nanoamps and a maximum voltage drop of 100V. That shows that this wire has an adequate safety margin and we will not melt any wire. These wires are used as twisted pairs for unique functional signals, EMI reduction, noise reduction, and flexibility requirement for integration of CDE assembly to AFEE board, which does not permit the use of higher gauge wires. Precautions are taken during assembly activities and acceptability inspections are carried out to ensure the wire integrity by providing proper stress relief where required at all times. Magnification aids and handling fixtures shall be used for visual inspection of in-process and completed assemblies. Wires will be used and inspected as defined in NASA-STD-8739.3 for Soldered Electrical Connections and NASA-STD-8739.4 for Crimping, Interconnecting Cables, Harnesses, and Wiring.

Hence we do not see any issue in using this 28 AWG wire for the application as defined above.